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## OCCURRENCE OF *ECHINOSTOMUM SPINULOSUM* RUD.

N. C. GILBERT.

IN THE intestinal cœca of an adult male Loon (*Gavia imber*) killed near Ann Arbor, Michigan, in April, 1904, I found from forty to fifty mature distomes, which I have identified as *Echinostomum spinulosum* Rudolphi, a worm which I have not been able to find hitherto reported for North America. Later, in August of the same year, I obtained eight more specimens from the intestine of a Bonaparte's Gull (*Larus philadelphia*). In each case the specimens were in a badly macerated condition.

There was this unimportant difference from the European species, that my specimens averaged somewhat smaller. Their length was about 2.37 mm., while the length for the European species is given as from 3–10 mm. (Stossich, '92). The anatomical differences are also very slight between this species and *E. pseudoechinatum* Olsson, *E. curyporum* Loos, *E. mordax* Loos, and *E. pendulum* Loos, and make this species very difficult to differentiate. These differences are, however, very accurately described by Loos ('99), and although slight, seem constant.

The body of the specimens which I obtained is elongated, subcylindrical, widest at the acetabulum, and tapers gradually posteriorly. Length, 2.37 mm.; width at acetabulum, 0.29 mm. The neck is constricted, and is armed with spines, arranged in regular rows, which extend as far as the posterior border of the acetabulum. The anterior end is conical in shape, with an expanded base, and is armed with twenty-two oral spines, in a single row, and of equal size.

The oral sucker is located at the extreme anterior end; diameter, 0.08 mm. The acetabulum is located 0.61 mm. from the anterior end; diameter 0.17 mm. The pharynx is located close behind the oral sucker, and the intestine divides just anterior to

the acetabulum into two cœca of equal length, which extend to the posterior extremity.

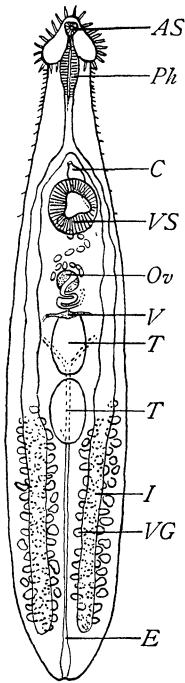


FIG. 1. — *Echinostomum spinulosum*. *as*, anterior sucker; *ph*, pharynx; *c*, cirrus-sac and seminal vesicle; *vs*, ventral sucker; *ov*, ovary; *v*, vitelline receptacle; *t*, testis; *i*, intestine; *vg*, vitelline glands.

The ovary is situated 0.15 mm. back of the acetabulum, in the median line, is round, and is 0.05 mm. in diameter. The oviduct passes posteriorly, makes two simple coils, receives the vitelline duct, and is surrounded by the shell gland. It then passes anteriorly, and after a few turns, it opens to the exterior just anterior to the acetabulum, and beside the cirrus-sac. The ova are rather large, oval, 0.09 by 0.06 mm., and from four or five to twenty-four were counted in one individual.

The vitelline glands consist of a large number of simple follicles, and extend as far anteriorly as the anterior border of the posterior testis. They are scattered over the entire region as far back as the ends of the intestinal cœca, and show a distinct bilateral arrangement. They open by two lateral ducts into a median receptacle, just anterior to the testis.

The testes are oval and relatively large, and located in the same antero-posterior line; length, 0.17 mm. by 0.12 mm., and 0.03 mm. apart.

The cirrus-sac and seminal vesicle lie just beneath the anterior margin of the acetabulum, and open to the exterior a short distance anterior to it.

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